



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Polymer Mixtures							
Course Code		KİM544		Couse Level		Second Cycle (Master's Degree)			
ECTS Credit	6	Workload	150 (<i>Hours</i>)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		This lecture is designed to provide a solid background for the students who intend to go on to the graduate study and a thorough background in the fundamentals of polymer mixtures and for characterization of polymer chemistry, Enthalpy of binary polymer mixtures							
Course Content		Introduction of polymer mixtures, industrial applications, properties of polymer mixtures, thermodynamic properties of mixtures, polymers in solutions, the mechanical properties of the mixtures, viscosity characteristics of the polymer mixtures, phase diagrams of polymer mixtures, binary polymer-polymer mixtures, teaching of issues such as viscosity and surface tension, industrial applications and real mixtures and search for foundations							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion					
Name of Lecturer(s)		Prof. Erdener KARADAĞ							

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	20
Final Examination	1	60
Assignment	4	20

Recommended or Required Reading

1	Physical Chemistry of Polymers, A. TAGER
2	Physical Chemistry of Macromolecules, S. F. SUN,
3	Introduction to Physical Polymer Science, L. H. SPERLING

Week	Weekly Detailed Course Contents	
1	Theoretical	Polymers in solutions
2	Theoretical	Compatibility of polymers in solutions
3	Theoretical	Determination of mutual solubility of polymers
4	Theoretical	Structure of polymer mixtures
5	Theoretical	Determination of glassy-transition temperatures of polymer mixtures
6	Theoretical	Three component systems, Polymer compatibility determined by various methods
7	Theoretical	Thermodynamics of binary polymer-polymer systems
8	Intermediate Exam	MIDTERM EXAM
9	Theoretical	Mechanical properties of polymer mixtures
10	Theoretical	Enthalpy of binary polymer mixtures
11	Theoretical	Mixing free energies of polymers
12	Theoretical	Entropy of binary polymer mixtures
13	Theoretical	Phase diagrams on polymer-polymer mixtures
14	Theoretical	Real polymer solutions
15	Theoretical	Ion-exchange resins
16	Final Exam	FINAL EXAM

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	3	42
Assignment	4	0	8	32
Reading	1	0	37	37
Quiz	1	3	3	6
Midterm Examination	1	12	2	14



Final Examination	1	16	3	19
Total Workload (Hours)				150
[Total Workload (Hours) / 25*] = ECTS				6
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	The introduction of the polymer mixture and industrial applications
2	The properties of the polymer mixture and thermodynamic properties of mixtures
3	Polymer solutions
4	Mechanical properties of the mixtures
5	Viscosity characteristics of the polymer mixtures and the Phase diagrams of polymer mixtures
6	The binary polymer-polymer mixtures
7	to be able to consider the submission of new issues, such as viscosity and surface tension
8	The Real mixtures
9	Industrial applications

Programme Outcomes (Chemistry Master)

1	To be able to gain proficiency in depths and analysis by statistical methods in the same or a related area depending on the undergraduate competence,.
2	To be able to use the knowledge of his/her field and the skills to solve problems and/or applications in interdisciplinary research.
3	To be able to adopt to evaluate the information and skill his/her field by critical approach.
4	To be able to evaluate the effect of important persons, case and fact on his/her field applications.
5	To be able to gain the ability to discuss write and orally present to a group of literate listener.
6	To be able to communicate orally and written in a foreign language at least at European language B2 level.
7	To be able to use computer programs related to his/her field and have skills for informatics communication.
8	To be able to be careful in protecting social, scientific and cultural ethics in collection data, application and presentation.
9	To be able to develop strategic, political and application plans in his/her field and may evaluate the outcomes in quality periods.

Contribution of Learning Outcomes to Programme Outcomes 1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High

	L1	L2	L3	L4	L5	L6	L7	L8	L9
P1	5	5	5	5	5	5	5	5	5
P2	5	4	5		3	3	3	3	4
P3	5	4	5		3	3	3	3	3
P4	5	4	4		3	3	3	3	
P5	5	3	5		3	3	3	3	
P6	5	3							
P8				4					
P9	4	4							

